

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of :
: Kazuhiro ITAGAKI : Confirmation Number: 2827
: Serial No. 10/653,247 : Group Art Unit: 2625
: Filed: September 3, 2003 : Examiner: Iriana Cruz
:
For: DATA TRANSMISSION APPARATUS

VERIFICATION OF ENGLISH TRANSLATION

Commissioner for Patents
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Sir:

I, Masahiro ISHINO of c/o Aoyama & Partners, IMP Building, 1-3-7, Shiromi, Chuo-ku, Osaka 540-0001 Japan, declare that I am conversant in both the Japanese and English languages and that the English translation as attached hereto is an accurate translation of Japanese Patent Application No. 2002-258910 filed on September 4, 2002.

Signed this 5th day of October, 2009


Masahiro ISHINO

PATENT OFFICE
JAPANESE GOVERNMENT

This is to certify that the annexed is a true copy of
the following application as filed with this Office.

Date of Application: September 4, 2002

Application Number: Patent Application No. 2002-258910

Applicant(s): MINOLTA Co., Ltd.

August 14, 2003

Commissioner,

Patent Office

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2003-3066159

Document Name: Application for Patent

Docket No.: 184765

Date of Application: September 4, 2002

Addressee: Commissioner, Patent Office

International Patent Classification: H04L 12/00

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Payment of Fees:

Prepayment Book No.: 013262
Amount to be paid: ¥ 21,000

Attached document:

Item: Specification 1 copy
Item: Drawing 1 copy
Item: Abstract 1 copy
Registration No. of General Power: 0113154

Request for proof transmission: Yes

TITLE OF PAPER SPECIFICATION

TITLE OF THE INVENTION Network Transmission Apparatus

CLAIMS

1. A network transmission apparatus comprising:

a transmission device which sends an e-mail attaching a file and a request of returning confirmation of receipt of the e-mail and receives a response of a result of the confirmation from a destination; and

a report issuer which issues a transmission report on a transmission or transmissions including a response or responses of the confirmation of receipt from the destination;

wherein said report issuer includes data on which no response on the confirmation has been received and data on which no response on the confirmation had been received on the previous issue in the transmission management report.

2. The network transmission apparatus according to claim 1, wherein the transmission management report includes data on a predetermined number of transmissions, and the report is issued when a number of transmissions in correspondence to a number of transmissions within a wait time at the previous issue time subtracted by a predetermined number of transmission.

3. The network transmission apparatus according to claim 1 or 2, wherein the data of a transmission or transmission on which the confirmation have not yet been received includes data which indicates that the confirmation has not yet been received.

4. The network transmission apparatus according to one of claims 1 to 3, wherein said network transmission apparatus is a facsimile apparatus.

5. A program to be executed by a computer, comprising the steps of:

attaching a file to an e-mail and sending the e-mail and a request of returning confirmation of receipt of the e-mail

;

receiving the confirmation of receipt from the destination; and

issuing a transmission management report including data on a result of the received confirmation of receipt;

wherein in the issue of the transmission management report the report includes data on a transmission or transmissions on which the confirmation have not yet been received and data on a transmission or transmissions on which the confirmation had not yet been received at the previous issue of the report.

DETAILED EXPLANATION OF THE INVENTION

[0001]

TECHNICAL FIELD OF THE INVENTION

The present invention relates to issuance of a transmission management report on data transmission through the Internet.

[0002]

PRIOR ART

In a facsimile apparatus, a transmission management report is provided for stating a result of image transmission. In a prior art Internet facsimile, a simple mode is used for transmission management not including confirmation of receipt of data. In this mode, the sending facsimile apparatus cannot

receive confirmation of receipt of data from the receiving end, and a transmission management report states records on the transmission of image data to a server. The transmission management report is usually issued when the number of transmissions reaches a predetermined number or when a predetermined time elapses. On the other hand, in full mode of transmission management, it is requested to return confirmation of receipt of data. The request can be realized for example with the message distribution notification (hereinafter referred to as MDN) function. The sending end of image data issues a transmission management report according to the response of MDN (that is, confirmation of receipt of data). For example, in a facsimile apparatus disclosed in JP-A 2001-309109, a transmission management report is issued when a predetermined time elapses and the number of transmissions exceeds a predetermined number after sending the MDN request. If the predetermined time elapsed without receiving an MDN response to the MDN request, it is described for the transmission in the transmission management report.

[0003]

PROBLEM(S)

However, in the Internet facsimile, the MDN response to the MDN request may not be received or it may take a long time until the MDN response is received, according to the environment at the receiving end. When a transmission management report is issued, the result of transmission may not be confirmed if the wait time for MDN response has not elapsed. In such a case, the transmission management report is issued before final results of the transmissions are received, but such tra

nsmission management is not adequate.

[0004]

An object of the invention is to manage transmissions more easily for a data transmission apparatus which transmits data through a network.

[0005]

SOLUTION

A network transmission apparatus according to the invention comprises: a transmission device which sends an e-mail attaching a file and a request of returning confirmation of receipt of the e-mail and receives a response of a result of the confirmation from a destination; and a report issuer which issues a transmission report on a transmission or transmissions including a response or responses of the confirmation of receipt from the destination. The report issuer includes data on which no response on the confirmation has been received and data on which no response on the confirmation had been received on the previous issue in the transmission management report. Thus, the transmission management report can deal with the message transmission and the result of correspondence of message processing and can present them. The network transmission apparatus is for example a facsimile apparatus.

[0006]

In the network transmission apparatus, for example, the transmission management report includes data on a predetermined number of transmissions. The report is issued when a number of transmissions in correspondence to a number of transmissions within a wait time at the previous issue time subtracted by a predetermined number of transmission.

[0007]

In the network transmission apparatus, for example, the data of a transmission or transmission on which the confirmation have not yet been received includes data which indicates that the confirmation has not yet been received.

[0008]

A program to be executed by a computer according to the invention comprises the steps of: attaching a file to an e-mail and sending the e-mail and a request of returning confirmation of receipt of the e-mail; receiving the confirmation of receipt from the destination; and issuing a transmission management report including data on a result of the received confirmation of receipt. In the issue of the transmission management report the report includes data on a transmission or transmissions on which the confirmation have not yet been received and data on a transmission or transmissions on which the confirmation had not yet been received at the previous issue of the report.

[0009]

EMBODIMENTS

Embodiments of the invention are explained below with reference to the drawings.

Fig. 1 shows an entire facsimile apparatus of an embodiment according to the invention. The apparatus is for example a multi-functional peripheral equipped with facsimile function, and it can send or receive data by using the Internet facsimile function. A scanner 100 acquires image data by scanning a document put at a predetermined position on a platen thereof. An operational panel 102 is used to set a destination of facsimile

transmission or the like. An e-mail processor 104 makes and sends an e-mail with attached image data of the document read by the scanner. The e-mail is sent to a receiving end connected to a network such as a local area network (LAN) or the Internet via a LAN controller 106. Further, data on the facsimile sending is sent to a report processor 110. In a case of facsimile receiving from the external, an e-mail received through the LAN controller 106 is analyzed by an e-mail analyzer 108, and the attached image data is printed by a printer 112. The LAN controller 106 consists of a sender which sends data to the external and a receiver which receives data from the external.

[0010]

Fig. 2 shows a control system of the apparatus shown in Fig. 1. A central processing unit (hereinafter referred to as CPU) 120 is connected to a read only memory (ROM) 122 storing programs and the like, a random access memory (RAM) 124 used as a work area, an external storage device 126 such as a hard disk drive, a static random access memory (SRAM) 128 and an image processor 130. The CPU 120 is further connected to the scanner 100, the operational panel 102, the e-mail processor 104, the LAN controller 106, the e-mail analyzer 108, the report processor 110 and the printer 112. Image data obtained by the scanner 100 is processed by the image processor 130, and the processed image data to be transmitted are attached to an e-mail. A facsimile transmission data received from the external is processed by the image processor 130 and is printed by the printer 112. Further, data for transmission management report is stored in the SRAM 128. A transmission management report issued by the report processor 110 is printed by the printer 11

2. The e-mail processor 104 and the e-mail analyzer 108 are known software processings, and they are not explained here in detail. The report processor 110 performs a processing of a software program to be explained later for creating a transmission management report.

[0011]

In a facsimile sending to an apparatus at a destination by the facsimile apparatus, it is requested to the apparatus to return confirmation of receipt. The request to return the result is an MDN request. Then, the destination apparatus sends a response on confirmation of receipt. The facsimile apparatus issues a transmission management report according to the result of the confirmation of the receipt (an MDN response).

[0012]

The transmission management report is issued at predetermined timings, for example, when a predetermined time such as 24 hours elapses, or when the number of facsimile transmissions reaches a predetermined number. It is desirable to receive MDN responses in real time. However, there are cases when an MDN response cannot be received when a predetermined time elapses. In such a case, the situation is stated in the transmission report. Thus, the transmission management report includes information on a response to the MDN request.

[0013]

Table 1 shows an example of transmission management report. The items compiled in the transmission management report include mark, destination address (To), date and time of transmission, and result of transmission. In the transmission m

anagement report, the above-mentioned predetermined number of transmissions to be listed in the transmission management report is thirteen. The results of transmission (MDN responses) have already been received for nine among thirteen transmissions. A mark (*) is added for the remaining four transmissions, and it means that the MDN response has not yet been received. Thus the transmission management report states results on the MDN response (marks). Then, the message transmissions correspond to the responses of transmissions of message processing (MDN response), and the report is displayed as a list.

[0014]

Table 1 Transmission management report

Mark	To	Date and time of Transmission	Result of transmission
	a@b	2002. 7. 9. 11:23	delivered
	c@d	2002. 7. 9. 11:26	undelivered
	e@f	2002. 7. 9. 11:30	undelivered
	g@h	2002. 7. 9. 11:35	undelivered
	i@j	2002. 7. 9. 11:42	undelivered
	k@l	2002. 7. 9. 11:50	undelivered
	m@n	2002. 7. 9. 12:31	delivered_
	o@p	2002. 7. 9. 12:37	undelivered
	q@r	2002. 7. 9. 12:45	undelivered
*	s@t	2002. 7. 9. 12:52	
*	u@v	2002. 7. 9. 12:58	
*	w@x	2002. 7. 9. 13:04	
*	y@z	2002. 7. 9. 13:26	

[0015]

It is to be noted that the above-mentioned transmission or transmissions on which confirmation of receipt of transmission (MDN response) is not received and on which the wait time has not elapsed at the output timing of the report are also included in the next transmission management report. Therefore, a print area in a transmission management report has a structure as shown in Figs. 3 and 4. A transmission management report shown in Fig. 3 includes the transmission or transmissions on which confirmation of receipt of transmission is uncertain, and the print area therefor is positioned at the last of the report. As shown in Fig. 4, the next transmission management report includes the transmission or transmissions on which the wait time had not elapsed at the output time of the previous transmission management report, and the print area therefor is positioned at the top of the report.

[0016]

Previously, a transmission management report is issued when N mails (wherein N is a natural number) are sent. On the other hand, in the facsimile apparatus of this embodiment, a transmission management report is issued when transmissions of a number of $\{N - (\text{the number of transmission or transmissions on which the wait time had not elapsed and confirmation of receipt (MDN response) had not been received when the last transmission management report was issued})\}$ are sent. Further, the transmission or transmissions on which the wait time had not elapsed when the last transmission management report is issued are described in the next transmission management report.

rt. A situation of each of the above-mentioned transmission or transmissions that the MDN responses were received after the wait time elapsed or that the wait time has not elapsed is described in the transmission management report (with marks).

[0017]

Fig. 5 is a flowchart for facsimile transmission (including issuance of transmission management report) according to a facsimile apparatus of this embodiment. When facsimile transmission is instructed, an e-mail with attached image file (image data) and an MDN request are sent (S100). Then, the data is stored as a transmission management report (S102).

Next, a timer is started (S104), and a message of "MDN response under waiting" is displayed in the operational panel 102 (S106).

Then, it is checked whether the number of facsimile transmissions reaches to a predetermined number (S108), and if so, the transmission management report is printed (S110). If the number of facsimile transmissions does not reach to the predetermined number and the wait time has elapsed (S112), the transmission management report is printed (S110). In this case, if the MDN response has not yet been received at the time out, the processing explained below is performed. If not in either one of the cases, no processing is performed (S114).

[0018]

Fig. 6 shows a flow for stating a transmission management report when a time out happens in the processing shown in Fig. 4. After the timer is started (S104), if a time out happens until the number of facsimile transmissions does not reach to the predetermined number (YES at S112), the mark in the transmiss

ion management report is removed on the relevant transmission (S120).

[0019]

Fig. 7 shows a flow for stating a transmission management report when an MDN is received from the destination. When the MDN is received (S130), it is stated in the column of transmission result for MDN that the MDN is received (S132). Further, a mark of transmission in the transmission management report is removed (S134).

[0020]

The issuance of the transmission management report can also be used for a personal computer facsimile.

[0021]

ADVANTAGES OF THE INVENTION

Because a response of confirmation of transmission result is stated in a transmission management report, transmission management becomes easier. As to transmissions on which the response of confirmation of transmission result is received after a predetermined time (or wait time) elapsed and transmissions on which no response is received after the predetermined time elapsed, the situation thereon is stated in the report. Thus, the transmission management report includes contents with the result on the response of receipt of transmission confirmation. Transmissions on which the response is waiting within the predetermined time when a transmission management report is issued, they are also reported in the next report.

When a transmission management report is issued on a predetermined number of transmissions, it can be issued when transmissions of a number of $\{N - (\text{the number of transmission or}$

transmissions on which the wait time had not elapsed when the last transmission management report was issued)} are sent.

Preferably, the transmission management report includes data that the result of confirmation of receipt has not yet been received, and transmission management becomes easier.

BRIEF EXPLANATION OF THE DRAWINGS

Fig. 1 is a block diagram of a facsimile apparatus.

Fig. 2 is a block diagram of a control system of the facsimile apparatus.

Fig. 3 is a diagram of an example of transmission management report.

Fig. 4 is a diagram of another example of transmission management report.

Fig. 5 is a flowchart for controlling facsimile transmission.

Fig. 6 is a flowchart on description of transmission management report when a time out happens.

Fig. 7 is a flowchart on description of transmission management report when an MDN is received from a destination.

EXPLANATION OF REFERENCE NUMERALS

100: Scanner. 102: Operation panel. 104: Electronic mail creator. 106: LAN controller. 108: Electronic mail analyzer. 110: Report creation controller. 112: Printer. 120: CPU. 128: SRAM.

TITLE OF PAPER ABSTRACT

[OBJECT] To make transmission management easy, in a transmission apparatus which requests to send a result of the transmission confirmation, on a transmission on which no response on the result is received.

[SOLUTION] A network transmission apparatus has a transmission device which sends an e-mail attaching a file and a request of returning confirmation of receipt of the e-mail and receives a response of a result of the confirmation from a destination; and a report issuer which issues a transmission report on a transmission or transmissions including a response or responses of the confirmation of receipt from the destination.

The report issuer includes data on which no response on the confirmation has been received and data on which no response on the confirmation had been received on the previous issue in the transmission management report.

[REPRESENTATIVE DRAWING] Fig. 4.

Fig. 1

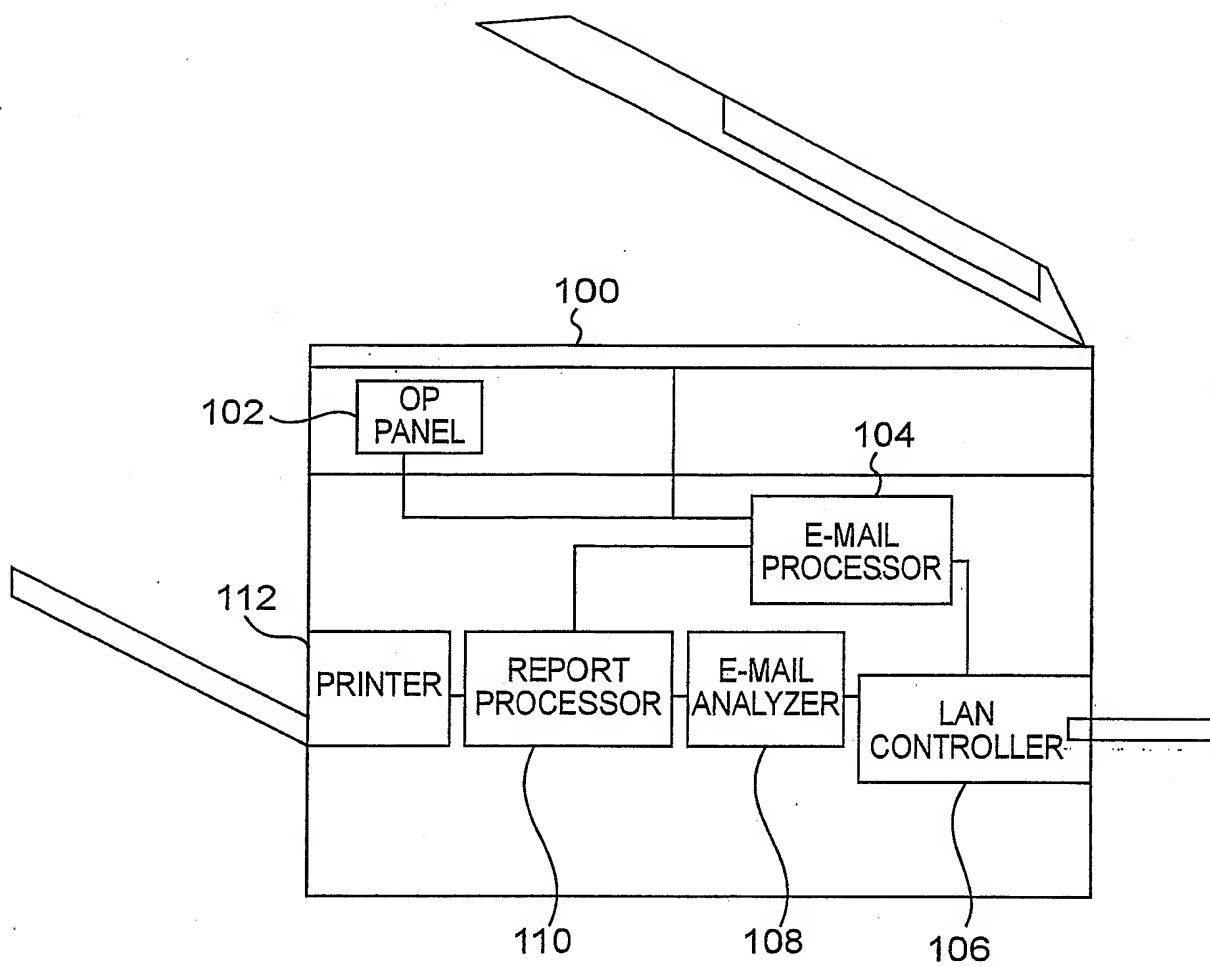


Fig.2

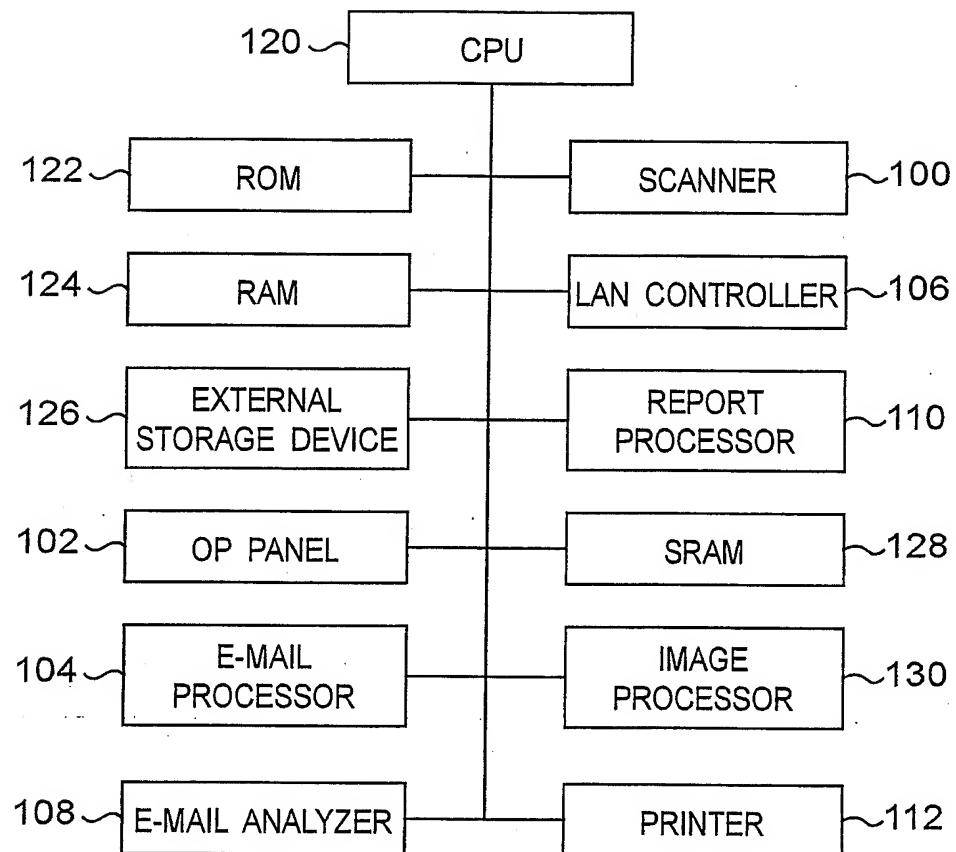


Fig.3

Mth REPORT

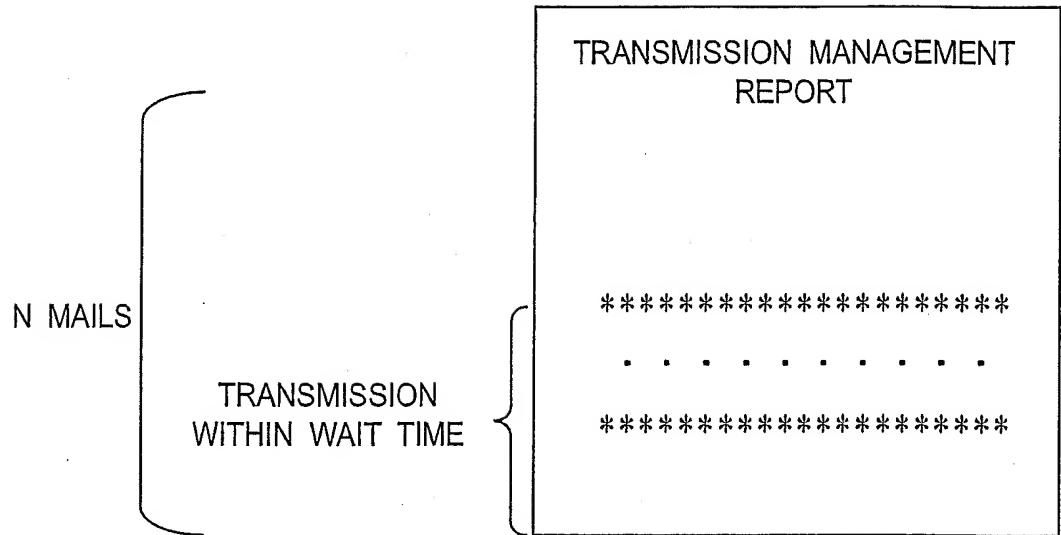


Fig.4

(M+1)th REPORT

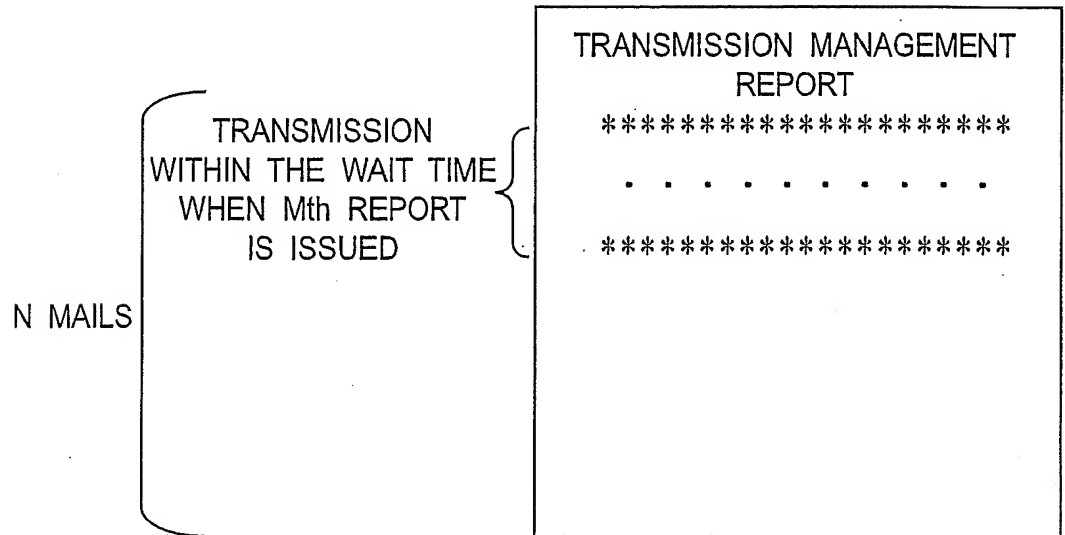


Fig.5

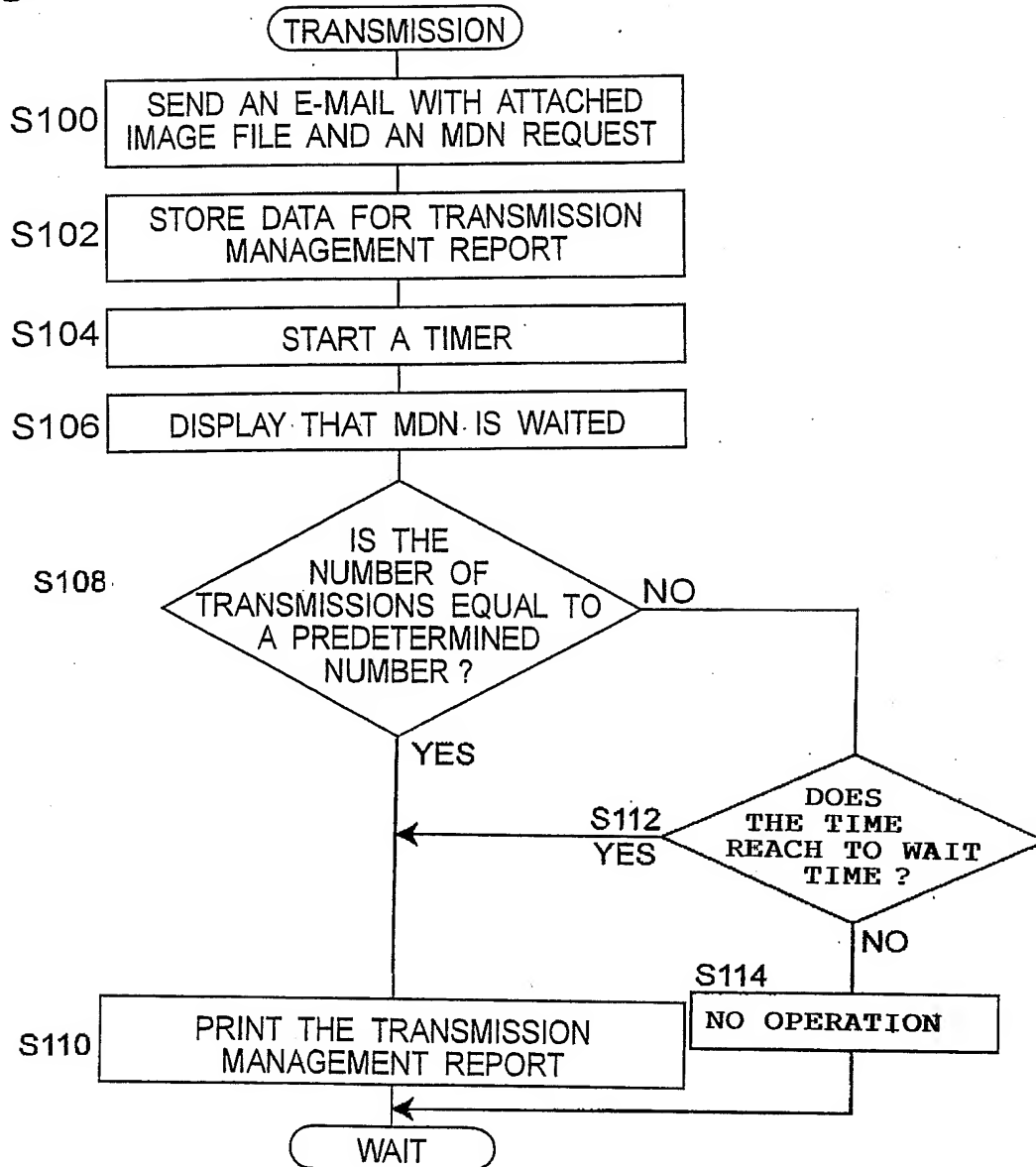


Fig.6

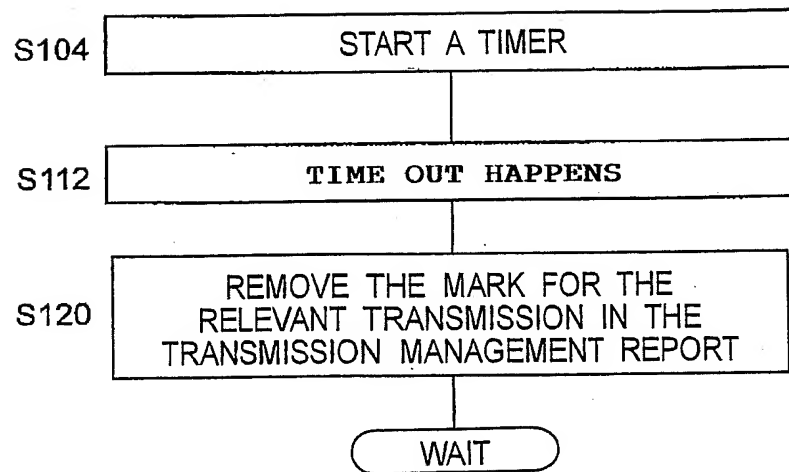
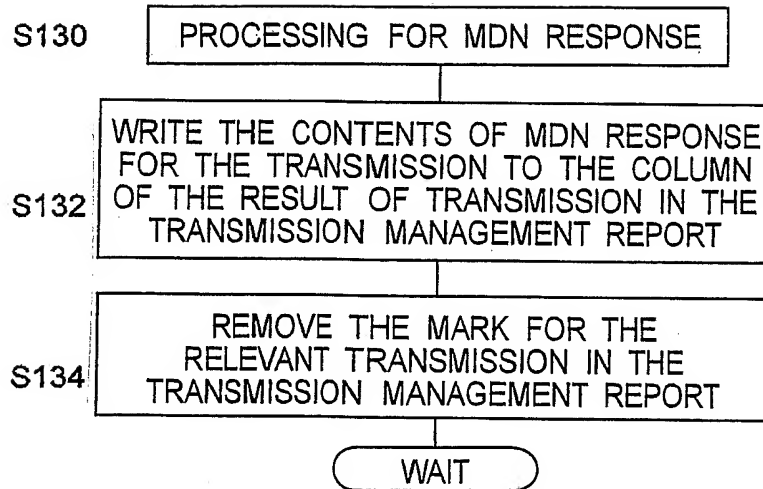


Fig. 7



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Kazuhiro ITAGAKI	:	Confirmation Number: 2827
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Signed this 5th day of October, 2009


Masahiro ISHINO

PATENT OFFICE
JAPANESE GOVERNMENT

This is to certify that the annexed is a true copy of
the following application as filed with this Office.

Date of Application: August 1, 2003

Application Number: Patent Application No. 2003-284953

Applicant(s): MINOLTA Co., Ltd.

August 14, 2003

Commissioner,

Patent Office

Yasuo IMAI

(seal)

2003-3066221

Document Name: Application for Patent

Docket No.: 190518

Date of Application: August 1, 2003

Addressee: Commissioner, Patent Office

International Patent Classification: H04L 12/00

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Claiming Priority based on prior application:

Application No.: Patent Application No. 2002-258910
Date of Application: September 4, 2002

Payment of Fees:

Prepayment Book No.: 163028
Amount to be paid: ¥ 21,000

Attached document:

Item: Claim 1 copy
Item: Specification 1 copy
Item: Drawing 1 copy
Item: Abstract 1 copy
Registration No. of General Power: 0113154

TITLE OF PAPER CLAIMS

CLAIMS

1. A data transmission apparatus comprising:
 - a sender which sends an e-mail and a request of returning confirmation of receipt of the e-mail to a destination;
 - a receiver which receives the confirmation of receipt from the destination; and
 - a controller which issues a transmission management report at predetermined timings, describing result of transmission for a plurality of transmissions in the transmission management report, wherein said controller describes in the transmission management report a transmission or transmissions on which the result of transmission is uncertain when the transmission management report is issued.
2. The data transmission apparatus according to claim 1, wherein the transmission or transmissions on which the result of transmission is uncertain include a transmission or transmissions on which the confirmation of result of transmission had not been received and a predetermined wait time had not elapsed when the transmission management report is issued.
3. The data transmission apparatus according to claim 1 or 2, wherein said controller describes in the transmission management report that the result of transmission is uncertain for the transmission or transmissions on which the result of transmission is uncertain.
4. The data transmission apparatus according to one of claims 1 to 3, wherein said controller describes in the transmission management report the transmission or transmissions on which a last transmission management report stated that the res

ult of transmission is uncertain.

5. The data transmission apparatus according to claim 4, wherein said controller describes in the transmission management report that the result of transmission is certain if the result of transmission becomes certain for the transmission or transmissions, on which a last transmission management report stated that the result of transmission is uncertain, when the transmission management report is issued.

6. The data transmission apparatus according to one of claims 1 to 5, wherein the request of returning confirmation of receipt is performed with an MDN.

7. A program for making a computer execute comprising the steps of:

 sending an e-mail and a request of returning confirmation of receipt of the e-mail to a destination;

 receiving the confirmation of receipt from the destination; and

 issuing a transmission management report at predetermined timings, the transmission management report describing result of transmission for a plurality of transmissions in the transmission management report, the transmission management report further describing a transmission or transmissions on which the result of transmission is uncertain when the transmission management report is issued.

8. The program according to claim 7, wherein the transmission or transmissions on which the result of transmission is uncertain include a transmission or transmissions on which the confirmation of receipt had not been received and a predetermined wait time had not elapsed when the transmission management

nt report is issued.

9. The program according to claim 7, wherein in said issuing step it is described in the transmission management report that the result of transmission is uncertain for the transmission or transmissions on which the result of transmission is uncertain.

10. The program according to claim 7, wherein in said issuing step the transmission or transmissions on which a last transmission management report stated that the result of transmission is uncertain are described in the transmission management report.

11. The program according to claim 10, wherein in said issuing step it is described in the transmission management report that the result of transmission is certain if the result of transmission becomes certain for the transmission or transmissions, on which a last transmission management report stated that the result of transmission is uncertain, when the transmission management report is issued.

12. The program according to one of claims 7 to 11, wherein the request of returning confirmation is performed with an MDN.

TITLE OF PAPER SPECIFICATION

TITLE OF THE INVENTION Data Transmission Apparatus

TECHNICAL FIELD

[0001]

The present invention relates to a data transmission apparatus which issues a transmission management report on data transmission through a network.

BACKGROUND ART

[0002]

An Internet facsimile, which can transmit image data attached to an e-mail though a network such as the Internet, becomes popular recently. Simple mode of transmission management for the Internet facsimile does not include confirmation of receipt of data. In this mode, the sending facsimile apparatus cannot receive confirmation of receipt of data from the receiving end, and a transmission management report states records on the transmission of image data (or e-mail) by the sending facsimile apparatus to the mail server. The transmission management report is usually issued when the number of transmissions reaches a predetermined number or when a predetermined time elapses.

[0003]

On the other hand, in full mode of transmission management for the Internet facsimile, the sending facsimile apparatus can request to return confirmation of receipt of data. The request can be realized for example with the message distribution notification (hereinafter referred to as MDN) function used in e-mail system. The sending end of image data issues a transmission management report according to the response of M

DN (that is, confirmation of receipt of data). For example, in a facsimile apparatus disclosed in JP-A 2001-309109, a transmission management report is issued when a predetermined time elapses and the number of transmissions exceeds a predetermined number after sending the MDN request. If the predetermined time elapsed without receiving an MDN response to the MDN request, it is described for the transmission in the transmission management report.

Patent document 1: JP-A 2001-309109

DISCLOSURE OF THE INVENTION

PROBLEM(S)

[0004]

However, in the Internet facsimile, the MDN response to the MDN request may not be received or it may take a long time until the MDN response is received, according to the environment at the receiving end. When a transmission management report is issued, the result of transmission may not be confirmed if the wait time for MDN response has not elapsed. In such a case, the transmission management report is issued before final results of the transmissions are received, but such transmission management is not adequate.

[0005]

An object of the invention is to make transmission management easy in a data transmission apparatus which transmits data through a network.

SOLUTION

[0006]

A data transmission apparatus according to the invention

includes: a sender which sends an e-mail and a request of returning confirmation of receipt of the e-mail to a destination; a receiver which receives the confirmation of receipt from the destination; and a controller which issues a transmission management report at predetermined timings, describing result of transmission for a plurality of transmissions in the transmission management report, wherein the controller describes in the transmission management report a transmission or transmissions on which the result of transmission is uncertain when the transmission management report is issued.

[0007]

A program for making a computer execute according to the invention comprises the steps of: sending an e-mail and a request of returning confirmation of receipt of the e-mail to a destination; receiving the confirmation of receipt from the destination; and issuing a transmission management report at predetermined timings, the transmission management report describing result of transmission for a plurality of transmissions in the transmission management report, the transmission management report further describing a transmission or transmissions on which the result of transmission is uncertain when the transmission management report is issued.

ADVANTAGES OF THE INVENTION

[0008]

According to the data transmission apparatus according to the invention, a transmission or transmissions on which the result of transmission has not yet been confirmed when a transmission management result is issued are stated in the transmission management result. The result of transmission on all

the transmissions is also described in the transmission management report, and the transmission management becomes easier.

EMBODIMENTS

[0009]

Embodiments of the invention are explained below with reference to the drawings.

Fig. 1 shows an entire facsimile apparatus of an embodiment according to the invention. The apparatus is for example a multi-functional peripheral equipped with facsimile function, and it can send or receive data by using the Internet facsimile function. (The data sending/receiving mentioned above are hereinafter referred to as facsimile sending/receiving.) A scanner 100 acquires image data by scanning a document put at a predetermined position on a platen thereof. An operational panel 102 is used to set a destination of facsimile transmission or the like. An e-mail processor 104 makes and sends an e-mail with attached image data of the document read by the scanner. The e-mail is sent to a receiving end connected to a network such as a local area network (LAN) or the Internet via a LAN controller 106. Further, data on the facsimile sending is sent to a report processor 110. In a case of facsimile receiving from the external, an e-mail received through the LAN controller 106 is analyzed by an e-mail analyzer 108, and the attached image data is printed by a printer 112. The LAN controller 106 consists of a sender which sends data to the external and a receiver which receives data from the external.

[0010]

Fig. 2 shows a control system of the apparatus shown in Fig. 1. A central processing unit (hereinafter referred to as CPU) 120 is connected to a read only memory (ROM) 122 storing programs and the like, a random access memory (RAM) 124 used as a work area, an external storage device 126 such as a hard disk drive, a static random access memory (SRAM) 128 and an image processor 130. The CPU 120 is further connected to the scanner 100, the operational panel 102, the e-mail processor 104, the LAN controller 106, the e-mail analyzer 108, the report processor 110 and the printer 112. In the Internet facsimile function, image data obtained by the scanner 100 is processed by the image processor 130, and the processed image data to be transmitted are attached to an e-mail. A facsimile transmission data received from the external is processed by the image processor 130 and is printed by the printer 112. Further, data for transmission management report is stored in the SRAM 128. A transmission management report issued by the report processor 110 is printed by the printer 112. The e-mail processor 104 and the e-mail analyzer 108 are known software processings, and they are not explained here in detail. The report processor 110 performs a processing of a software program for creating a transmission management report, and the software program is explained later.

[0011]

In a facsimile sending to an apparatus at a destination by the facsimile apparatus, it is requested to the apparatus to return confirmation of receipt. The request to return the result is an MDN request. Then, the destination apparatus sends confirmation of receipt (an MDN response). The facsimil

e apparatus issues a transmission management report according to the result of the confirmation of the receipt (the MDN response).

[0012]

The transmission management report is issued at predetermined timings, for example, when a predetermined time such as 24 hours elapses, or when the number of facsimile transmissions reaches a predetermined number. In the transmission management report, result of each facsimile transmission is shown according to the MDN response for the MDN request or the result of confirmation of data receipt. In a facsimile apparatus according to the embodiment, an MDN response is waited for the predetermined time or wait time after a MDN request is sent. However, an output timing of the transmission management report may occur during the wait time. In the facsimile apparatus of this embodiment, the transmission management report includes data on transmission or transmissions on which the result of transmission is uncertain at the output timing of the report, that is, transmission or transmissions on which the confirmation of report is not received and on which the wait time has not elapsed at the output timing of the report. Thus, the transmission management report reflects a situation of the result of transmission on all the transmissions.

[0013]

Table 1 shows an example of transmission management report. The items compiled in the transmission management report include mark, destination address (To), date and time of transmission, and result of transmission. In this example, the above-mentioned predetermined number of transmissions to be 1

isted in the transmission management report is thirteen. In the transmission management report shown in Table 1, the results of confirmation of transmissions (MDN responses) have already been received for nine among thirteen transmissions. That is, the result of transmission is stated only for the nine transmissions on which the MDN responses are received. A mark (*) is added for the remaining four transmissions, and it means that the MDN response has not yet been received and that the wait time has not yet elapsed when the report is issued. Thus the situation on the result of all the transmissions can be displayed as a list.

[0014]

Table 1

Mark	To	Date and time of Transmission	Result of transmission
	a@b	2002. 7. 9. 11:23	delivered
	c@d	2002. 7. 9. 11:26	undelivered
	e@f	2002. 7. 9. 11:30	undelivered
	g@h	2002. 7. 9. 11:35	undelivered
	i@j	2002. 7. 9. 11:42	undelivered
	k@l	2002. 7. 9. 11:50	undelivered
	m@n	2002. 7. 9. 12:31	delivered_
	o@p	2002. 7. 9. 12:37	undelivered
	q@r	2002. 7. 9. 12:45	undelivered
*	s@t	2002. 7. 9. 12:52	
*	u@v	2002. 7. 9. 12:58	
*	w@x	2002. 7. 9. 13:04	
*	y@z	2002. 7. 9. 13:26	

[0015]

It is to be noted that the above-mentioned transmission or transmissions on which confirmation of receipt of transmission (MDN response) is not received and on which the wait time has not elapsed at the output timing of the report are also included in the next transmission management report. Therefore, a print area in a transmission management report has a structure as shown in Figs. 3 and 4. A transmission management report shown in Fig. 3 includes the transmission or transmissions on which confirmation of receipt of transmission is uncertain, and the print area therefor is positioned at the last of the report. As shown in Fig. 4, the next transmission management report includes the transmission or transmissions on which the wait time had not elapsed at the output time of the previous transmission management report, and the print area therefor is positioned at the top of the report.

[0016]

Previously, a transmission management report is issued when N mails (wherein N is a natural number) are sent. On the other hand, in the facsimile apparatus of this embodiment, a transmission management report is issued when transmissions of a number of $\{N - (\text{the number of transmission or transmissions on which the wait time had not elapsed and confirmation of receipt (MDN response) had not been received when the last transmission management report was issued})\}$ are sent. Further, the transmission or transmissions on which the wait time had not elapsed when the last transmission management report is issued are described in the next transmission management report.

rt. A situation of each of the above-mentioned transmission or transmissions that the MDN responses were received after the wait time elapsed or that the wait time has not elapsed is described in the transmission management report.

[0017]

Fig. 5 is a flowchart for facsimile transmission (including issuance of transmission management report) according to a facsimile apparatus of this embodiment. It is executed by the CPU 120 according to the control program stored in the ROM 122 or in the external storage device 126. When facsimile transmission is instructed, an e-mail with attached image file (image data) and an MDN request are sent (S100). Then, data such as a destination and date and time of the transmission are stored, for example, in the external storage device 126 in order to be used for the transmission management report (S102).

[0018]

Next, a timer is started (S104), and a message of "MDN response under waiting" is displayed in the operational panel 102 (S106).

[0019]

Then, it is checked whether an MDN response for the transmission sent at step S100 is received or not (S108). If the MDN response is received (YES at S108), a processing therefor is performed (S110). If the MDN response is not received (NO at S108), the processing at step S110 is skipped.

[0020]

Fig. 6 shows a subroutine of the processing for MDN response performed at step S110. When the MDN response is received (S108 in Fig. 5), the contents of the MDN response ("delivered"

or "undelivered") is written for the transmission to the column of result of transmission in the transmission management report (S130). Further, if the mark had been added for the transmission at the column of mark in the transmission management report, the mark is removed (S132).

[0021]

Returning to Fig. 5, it is checked whether the timer set at step S104 counts up or a time out happens (S112). When the time out happens (YES at S112), if the mark is added to the column of mark in the transmission management report, the mark is removed (S114). If the time out does not happen (NO at S112), the processing at step S114 is skipped.

[0022]

Next, it is checked whether the number of facsimile transmissions reaches to a predetermined number or not (S116). If the number of facsimile transmissions reaches to the predetermined number (YES at S116), marks are added to the mark column in the transmission management report for all the e-mails on which MDN responses have not yet been received and the wait time has not elapsed at this time (S118), and the transmission management report is printed (S120). Alternatively, data of the transmission management report is sent to a predetermined destination such as an administrator or a designated user, without printing the report. If the number of facsimile transmissions does not reach to the predetermined number (NO at S116), processings at steps S118 and S120 are skipped.

[0023]

The above-mentioned embodiment is explained with reference to an example of a multi-functional peripheral having the

Internet facsimile function. However, the invention is not limited to such a multi-functional peripheral. For example, the invention can be applied to a dedicated facsimile apparatus having the Internet facsimile function. Further, the invention can be applied to any apparatus which can send and receive an e-mail with attached data, such as a mobile phone, a personal digital assistant or a personal computer.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024]

Fig. 1 is a block diagram of a facsimile apparatus.

Fig. 2 is a block diagram of a control system of the facsimile apparatus.

Fig. 3 is a diagram of an example of transmission management report.

Fig. 4 is a diagram of another example of transmission management report.

Fig. 5 is a flowchart for controlling facsimile transmission.

Fig. 6 is a flowchart of a subroutine of MDN receiving.

EXPLANATION OF REFERENCE NUMERALS

[0025]

100: Scanner. 102: Operation panel. 104: Electronic mail creator. 106: LAN controller. 108: Electronic mail analyzer. 110: Report creation controller. 112: Printer. 120: CPU. 128: SRAM.

TITLE OF PAPER ABSTRACT

OBJECT To make transmission management easy in a data transmission apparatus which sends data through a network.

SOLUTION A data transmission apparatus includes: a sender which sends an e-mail and a request of returning confirmation of receipt of the e-mail to a destination; a receiver which receives the confirmation of receipt from the destination; and a controller which issues a transmission management report at predetermined timings, describing result of transmission for a plurality of transmissions in the transmission management report. The controller describes in the transmission management report a transmission or transmissions on which the result of transmission is uncertain when the transmission management report is issued.

REPRESENTATIVE DRAWING Fig. 5.

Fig. 1

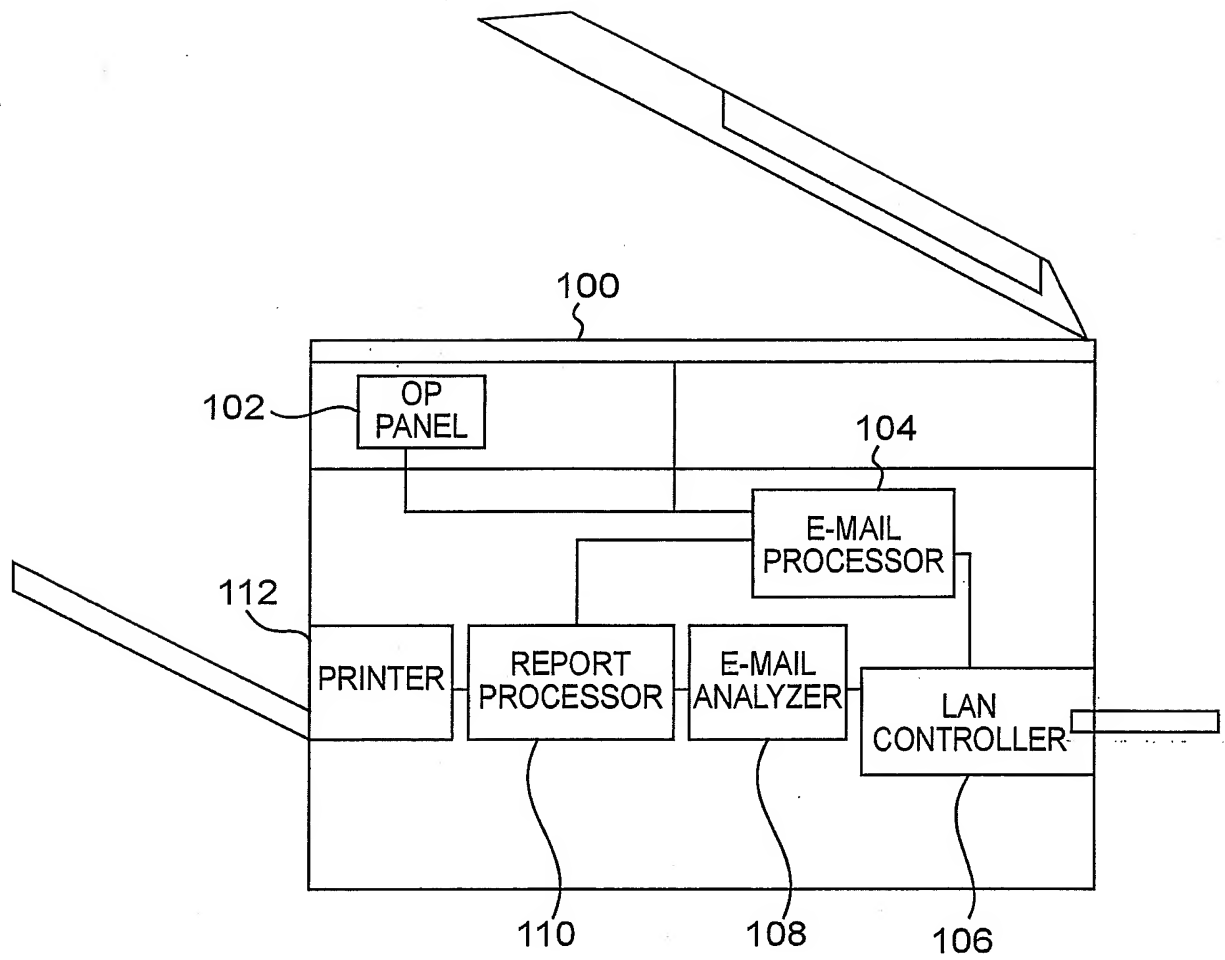


Fig.2

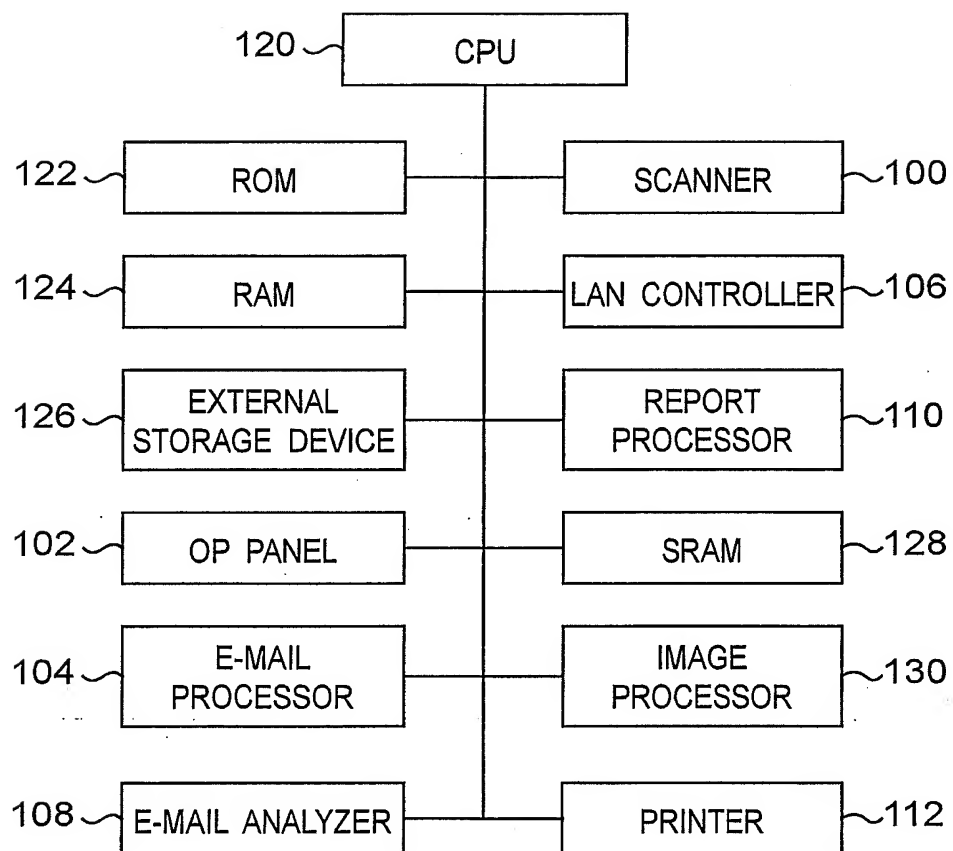


Fig.3

Mth REPORT

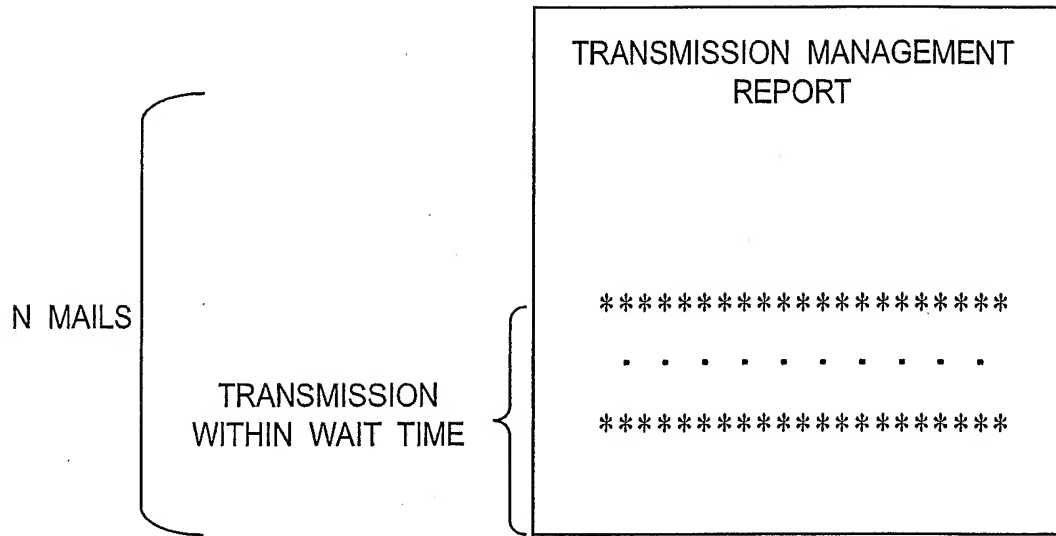


Fig.4

(M+1)th REPORT

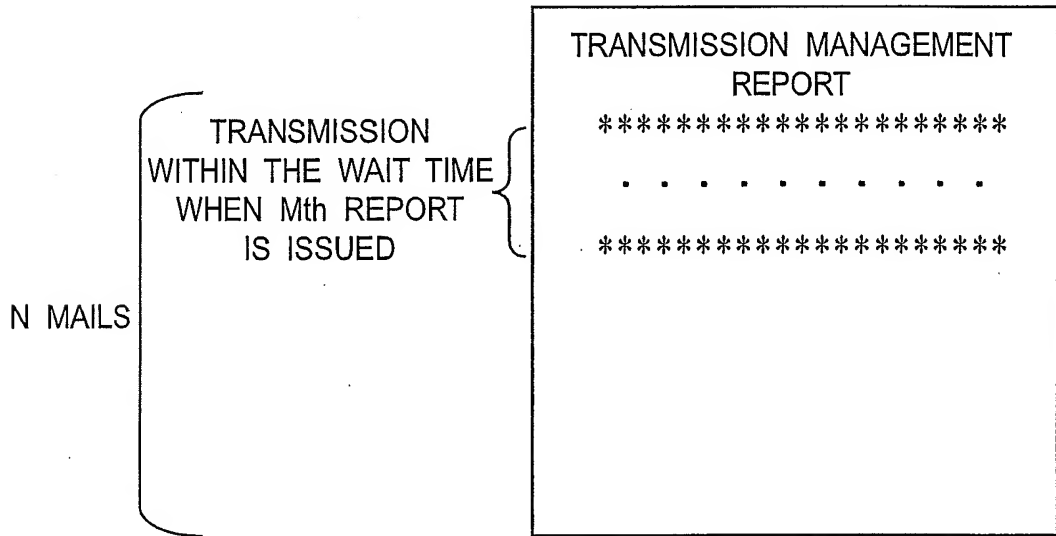


Fig.5

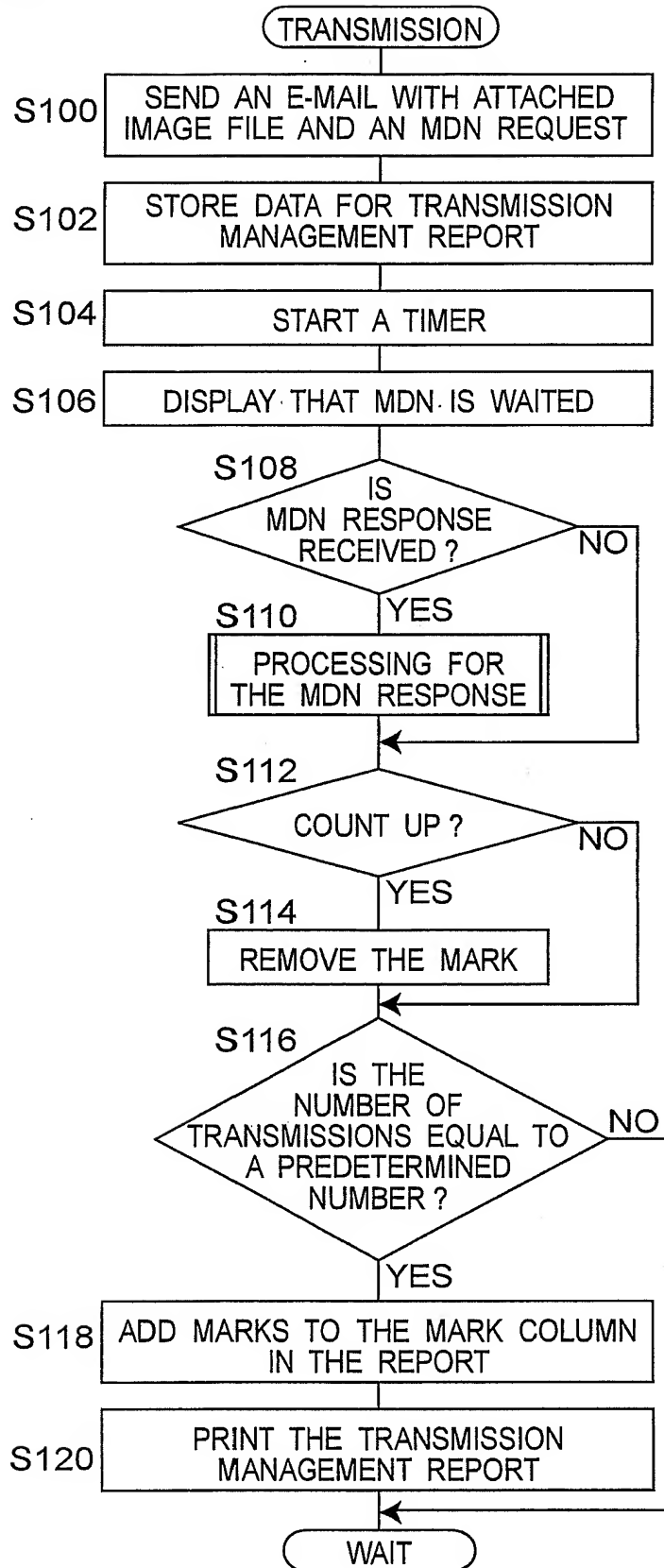


Fig.6

